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GROUP 1700

II. Claims 21-22, drawn to a method, classified in class 366, subclass 348.

Applicant notes that Group I of the Restriction Requirement includes claims 1-20 and 25-30. It is believed claims 23 and 24 should also be included in Group I because they are assembly claims that depend from independent claim 1.

Applicant respectfully traverses the election requirement. However, to be fully responsive, Applicant hereby elects Group I, claims 1-20 and 23-30.

According to the M.P.E.P. § 803, if the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it may include claims to independent or distinct inventions.

The Examiner must show that there would be a serious burden if the restriction is not required. Applicants respectfully submit that the Examiner nowhere contends, let alone demonstrates that a search of all the pending claims would be a serious burden. Further, at the Examiner's disposal are powerful electronic search engines providing the Examiner with the ability to quickly and easily search all of the claims. Applicants therefore respectfully request withdrawal of the restriction requirement and examination of all pending claims.

(2) The Office Action has additionally required that an election of species be made under 35 U.S.C. § 121 from the following two groups:

Species A: the claimed assembly; and

Species B: the claimed assembly in cartridge form.

Applicant respectfully traverses the election requirement. However, to be fully responsive to the requirement, Applicant hereby elects the following species:

<u>Species</u>	<u>Claims</u>
A	1-27

At least claims 1-9, 11-19 and 21-27 are generic to *both* species. At least claims 1-9, 11-19 and 21-27 read on species A. Applicant notes that claims 10 and 20 depend from claims 1 and 11, respectively. Thus, upon allowance of claims 1 and 11, consideration and allowance of claims 10 and 20 is proper.

According to the M.P.E.P. § 803, if the search and examination of an entire application can be made without serious burden, the examiner must examine it on the merits, even though it may include claims to independent or distinct inventions.

Applicant respectfully submits that the examination of the entire application, including claims 1-30, would not be a serious burden on the Examiner. This is particularly so because the Examiner has not provided reasons why the examination of all the species would be a serious burden. Therefore, Applicant respectfully requests that the elections requirement be withdrawn and that all claimed species be examined in this application. If Examiner chooses to maintain the election requirement, however, Applicant expects Examiner, if the elected species is found allowable, to continue to examine the full scope of the elected subject matter to the extent necessary to the patentability thereof, *i.e.*, extending the search to a reasonable number of non-elected species, as is the duty according to M.P.E.P. § 803.02 and 35 U.S.C. §121.

Furthermore, Applicant has paid a filing fee for an examination of all claims in this application. If the Examiner refuses to examine the claims paid for when this application was

filed, applicant must pay duplicative fees to file divisional applications for the non-elected or withdrawn groups of claims.

In conclusion, the Examiner has not shown that there would be a serious burden on the Examiner if the restriction was not made.

#### ADDITIONAL REMARKS

As requested in the Office Action dated February 4, 2003, the following are replacement sections correcting the word processing errors identified in the Amendment filed November 27, 2002. A marked-up version is not submitted because the changes are the same as those made in the Amendment filed November 27, 2002. Accordingly, Examiner Cooley indicated in a telephone call on February 20, 2003, that a repeated marked-up version need not be submitted.

#### IN THE SPECIFICATION

Please replace the paragraph located at page 7, line 8, with the following paragraph:

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B1 An outer bearing housing 32 is fastened to the seal housing base 22 by the bolt 24. The outer bearing housing 32 is connected to and retains an upper bearing 34 having an outer race 36 and an inner race 38. The outer bearing housing 32 is also connected to a lower bearing 40 having an outer race 42 and an inner race 44 as shown. The outer bearing housing 32 is thus fixed in relation to the mixing vessel flange 7 and does not rotate.

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Please replace the paragraphs located at page 8, lines 8 and 17 respectively, with the following two paragraphs:

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B2 In the preferred embodiment, the upper bearing 34 is a tapered roller bearing canted in the angular direction illustrated (i.e., upwardly away from the mixer shaft 12). The lower bearing 40 in this embodiment is also a tapered roller bearing canted as illustrated (i.e., downwardly away from the mixer shaft 12). The feature of angling the roller bearings 34, 40

opposite to each other provides a significant improvement over the prior art, because the bearings 34, 40 can provide improved radial and axial load handling, and further can resist bending along the length of the shaft 12 between the bearings 34, 40. This in turn provides a desirable resistance against bending along the mixer shaft 12, particularly relatively near the bearing locations, for example, at the location of the upper stationary sealing ring 31.

B2  
end  
In the illustrated preferred embodiment, the present invention provides resistance against axial, radial, and bending movement. The use of tapered roller bearings particularly enhances the axial restraining performance of the bearing arrangement. The tapered roller bearings also provide desirable lateral restraining ability. The provision of two sets of roller bearings, one spaced above the other in the axial direction along the mixer shaft 12, provides a restraining force at two different axial locations, thereby reacting to bending loads along the shaft. This restraining effect also tends to keep the mixer shaft 12 in a sufficiently linear condition at areas of the mixer shaft 12 relatively adjacent to the bearings. In this way, the arrangement of the bearings shown in the preferred embodiment of FIG. 1 improves the restraining ability of the bearing assembly in the area of the mixer shaft 12 near the seal assembly 28 as well. This restraining effect can reduce wear on the seal, thereby improving seal lifetime, and providing a better sealing effect during the life of the seal. A flexible coupling 18 may be used as shown to accommodate any misalignments between the coupled shafts.

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Please replace the paragraphs located at page, lines 10 and 16 respectively, with the following two paragraphs:

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B3  
FIG. 2 illustrates the above described components in exploded view, including the mixer shaft 12 having the lower flange 14 and the coupling 18. The housing base 22 and the seal housing top 26 that retain the seal assembly 28 are shown. Also shown is the outer bearing

housing 32 which retains the upper bearing 34 and the lower bearing 40 against the and inner bearing housing 46 which surrounds a portion of the mixer shaft 12.

FIG. 3 schematically depicts a bearing and seal assembly 10 as illustrated in FIGS. 1 and 2 being installed in an opening of atop wall of a mixer vessel 8, with a drive system 60 having a drive shaft 20 connected to the top end of the mixer shaft 12. The lower end of the mixer shaft 12 is connected to an impeller shaft 16 that has impellers 52 mounted thereon. In a preferred embodiment, the drive system 60 is an electric motor and speed reducer.

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IN THE ABSTRACT

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An assembly for supporting a mixer shaft in an opening in a vessel wall having a support mounted to the vessel wall around the opening and a seal ring supported by the support that engages a circumference of the mixer shaft with a sealing contact. A first tapered roller bearing is mounted to the support that surrounds and supports the mixer shaft at one axial location thereof and a second tapered roller bearing is mounted to the support that surrounds and supports the mixer shaft at a second axial location thereof.


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CONCLUSION

No fee is due in connection with the submission of this Response. However, any extension of time necessary to prevent abandonment is hereby requested, and any fee necessary for consideration of this response is hereby authorized to be charged to Deposit Account No. 50-2036.

Respectfully submitted,

BAKER & HOSTETLER LLP

  
Stephen S. Fabry  
Reg. No. 51,661

Washington Square, Suite 1100  
1050 Connecticut Avenue, N.W.  
Washington, D.C. 20036  
Tel: (202) 861-1500  
Fax: (202) 861-1783  
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